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22nd April, 1959.

COCOM Document No. 3489B

COORDINATING COMMITTEE

RECORD OF DISCUSSION

ON

THE COVERAGE OF ITEMS 1526 - COMMUNICATION CABLE

AND 4481 - RAILWAY SIGNALLING APPARATUS

13th April 1959

Present: Belgium(Luxembourg), Canada, Denmark, France, Germany, Greece, Italy, Japan, Netherlands, Norway, Turkey, United Kingdom, United States.

References: COCOM Documents Nos. 3436 and Addendum, 3444, 3450, 3451, 3452, 3464, 3470, 3472, 3473, 3474, 3475, 3483 and 3415.26/1 and 2.

1. The CHAIRMAN reminded the Committee that at the March 23rd session it had been agreed to discuss the scope of Items 1526 and 4481 during the present meeting (COCOM Document 3475, para. 32). The Committee had to determine whether the cables for railways which they had discussed on a number of occasions were covered by Item 1526, which dealt with communication cables, or by Item 4481, which referred to railway signalling apparatus.

2. The UNITED KINGDOM Delegate stated that his Delegation held that the cables under examination were covered by Item 1526 as at present defined and were thus subject to embargo. As to the proposal for an amendment submitted by the French Delegation, the question could not be disposed of in a single day. During the intervening period all Member Governments should suspend any action to authorise licences or exports.

3. The UNITED STATES Delegate stated that in the view of his authorities no ambiguity existed in the interpretation of the present coverage of Items 1526 and 4481. The coverage of Item 1526, which had been on List I since mid-1955, had never previously been in doubt. Its coverage remained explicit and unequivocal. It stated that communication cable of any type, including submarine cable, containing more than one pair of conductors and any conductor larger in diameter than 0.9 mm., was embargoed. The only exception to this embargo was for communication cable whose purpose was directly to connect densely-populated industrial areas of the Bloc with the Free World communication systems. In that case, two pairs of conductors with a diameter not exceeding 1.4 mm. might be exported. The definition of Item 1526 also embargoed communication cable of any type with a conductor diameter of 0.9 mm. or less if it were designed for use as long-distance carrier frequency cable unless it met the requirement for exception noted above. Such cable, of course, had precise electrical characteristics which were readily established. This definition obviously included any type of cable for transmittal of any type of communication: sounds, signals, writing, images, pulses, etc. This clearly embraced all the categories of communication, including but not limited to railroad signalling, telecommand, telemetering, telegraph, teleprinter, telautograph, telephone, telecontrol, facsimile, telephoto and television.

4. The coverage of Item 4481, which had been placed on the Watch List during the last List review, was based on the former List I Item 4481 ("Centralised traffic control (CTC) system of railway signalling controlled by code impulses; and parts specially designed therefor".) and List III

Item 3481 ("Automatic (block type) railway signal systems (except CTC system covered by Item 1481); and parts specially designed therefor"). In neither the former Item 1481 nor the former Item 3481 had there been any implication that connecting communication cable was included in the embargo definition. Communication cable had been and remained covered by Item 1526. The United States Delegation, which had proposed the present definition, moreover, had intended it only to cover the equipment and not otherwise-embargoed communication cable. The present Item 4481 covered railway signalling apparatus. This referred to CTC and automatic (block type) signals. It clearly did not comprehend communication equipment.

5. The NORWEGIAN Delegate stated that his authorities had studied this matter and that in their opinion there was no doubt that the cables in question were embargoed by Item 1526. Since this definition did not contain any exclusion clause for railway signalling cables, they considered the French procedure in this case unfortunate from the point of view of principle. They agreed with the suggestion put forward by several delegates that no further export of these cables should be licensed for the time being until the Committee or an expert group had made a study of the present definitions under Items 1526 and 4481 and agreement on a uniform application of these items had been reached.

6. The CANADIAN Delegate stated that in his Government's view the cable concerned was a highly strategic product and was covered beyond question by Item 1526. It was therefore desirable that Member Governments should abstain from exporting such material to the Soviet Bloc. The Delegate stated in conclusion that the coverage of Item 1526 seemed to him to be perfectly clear, but that if Item 4481 might give rise to doubts it would be as well to amend it so as to make it clear that it did not cover signal cables.

7. The FRENCH Delegate, referring to the memorandum submitted by the United States (COCOM Document No. 3483) noted that the United States arguments were based on the following considerations:

(a) The cable could be used for connecting communications, and its maximum capacity could be increased considerably through the use of teletype systems;

(b) It could thus be used for military purposes and there was reason to believe that it constituted a primary element for an early warning network which the U.S.S.R., according to report, intended to set up in Siberia.

(c) Its characteristics placed it definitely in the category caught by Item 1526 of the International Lists, i.e. in a category subject to embargo.

These arguments called for the following comments:

(a) This type of cable was used in Western Europe (in France, Belgium, Germany and Italy especially) for the purpose of short-distance railway signalling;

(b) The cable ordered by the U.S.S.R. clearly had a lower capacity than that of the cables used on western railway lines handling heavy traffic; its characteristics appeared to correspond to the traffic density and the distances between stations established for the Trans-Siberian Railway; it thus seemed eminently suitable for this purpose;

(c) Its use for purposes principally or exclusively of a military nature would suppose a considerable decrease in the railway's output and would probably necessitate the laying

of one or several additional railway lines;

(d) It could only be used for long-distance communication with the help of terminal and intermediary carrier-frequency equipment; such equipment, however, could provide for communications of the same nature, without resorting to cables, by using aerial carrier-frequency lines or by transmitting Hertzian beams which would be much more rapid and less costly to instal;

(e) The technique of this cable was regarded as more or less out of date in Western Europe and it would not be used, in France at any rate, for military communications;

(f) Industry in the Soviet Bloc was able to supply cables of the same kind, which did not require any exclusive technical knowledge: the German Delegation on the 18th March (COCOM Document 3470) had mentioned several factories manufacturing these cables in Eastern Germany, the U.S.S.R., Hungary, Poland and Czechoslovakia. These cables contained no raw material which the Soviet Bloc did not possess in sufficient quantities or could not obtain easily from the Free World.

8. The Delegate stressed that the delegations of several countries had considered, as did the French Delegation, that the capacity, in number of communications, of the cable ordered by the Russians was not excessive for the needs of the corresponding railway traffic. In particular, the Belgian Delegate had explained during the discussion on the 18th March, recorded in COCOM Document No. 3470, that the cables asked for by the U.S.S.R. had a total transmission capacity well below that of Belgian railway cables and that this was fully explained by the difference in traffic density and in distances between stations. The German Delegate had also stated that German railway cables usually had 66 pairs, and would allow of a much higher number of long-distance transmissions. As to France, if the cable used by the S.N.C.F. line PARIS-STRASBOURG were taken as an example, this had 37 quads/+ and 10 were unloaded star quads. The cable ordered by the Russians had 15 quads, 6 being loaded and 3 having an unspecified kilometric capacity, plus 5 conductors. The S.N.C.F. cable was thus, broadly speaking, equivalent to two-and-a-half times the Russian cable, which appeared normal in view of the greater traffic density in France.

9. These were some of the reasons for which the French Delegation considered that it was not "realistic" to suppose that the Russians would utilise the cable solely and entirely for its maximum capacity in connecting communications. It was even less realistic to suppose that loaded quads would be unloaded, for this was a long and difficult operation. If nevertheless one accepted the thesis upheld by the United States, according to which the cable ordered by the U.S.S.R. would provide 180 telephone channels or 2,160 teletype channels, the S.N.C.F. PARIS-STRASBOURG cable, if used under the same conditions, could provide: 37 x 12 = 444 telephone channels or 5,328 teletype channels. If, more reasonably, it were conceded that loaded or unspecified quads were used normally, the maximum capacity would then be 9 x 3 + 6 x 12 = 99 telephone channels for the Russian cable as against: 27 x 3 + 10 x 12 = 201 channels for the S.N.C.F. PARIS-STRASBOURG cable. In both cases, the cable ordered by the Russians thus had a transmission capacity much below that of the Paris-Strasbourg railway cable, and, even taking into account the difference in traffic, this capacity was not in the least exaggerated.

10. According to the United States reasoning, these cables would be utilised solely for communications and not for the railway. Could it be reasonably held that the Russians were experiencing such difficulties over their Eastward communications that, instead of laying normal long-distance communication cable, with a large number of coaxial or carrier-frequency channels, they accepted as a makeshift a railway cable considered by Western nations as low-frequency and short-distance cable, considerably more costly,

/+ of which 27 were loaded quads.

more vulnerable from the military point of view, more liable to interference and less easy to repair than an ordinary cable laid along a road or a track. From all points of view, this would seem to be a bad bargain for the Russians, when by using this railway cable normally, with modern processes for signalling, telecommand, telecontrol, advance preparation of itineraries, etc., they could considerably increase the output of the railway line and avoid laying one or more supplementary railway lines.

11. The Delegate pointed out, as the German Delegate had stressed, that it should not be assumed that the Russians intended to place orders with each country for the cables about which they had made enquiries. As their own industry was able to supply such cables, they would probably only place marginal orders enabling them to meet the time limits fixed in their plan owing to the short period of the year during which work was possible. According to information obtained, the laying of the 6,000-kilometre cable would be spread over 5 years, at the rate of 1,200 kilometres per year, and the only period of the year when work would be possible would be that between May and September. This was another reason why the French Delegation believed that if the Russians had urgent need for communication circuits they would be obliged to satisfy it, not by means of this cable, but by means of Hertzian beams or aerial carrier-frequency lines, much more rapid and less costly to instal.

12. The NETHERLANDS Delegate stated that what had just been said by the French Delegate might contain new elements which his authorities would study. At the present stage, however, he had been instructed to stress that these communication cables had been placed under embargo on the initiative of the United Kingdom and the United States. At the time of the 1958 List review, this item had been left practically unchanged, which indicated a unanimity of views as to the strategic nature of the products covered. For this reason the Netherlands Government could not share the opinion expressed by the French Delegation to the effect that the communication cables ordered by the U.S.S.R. were not covered by Item 1526. The Netherlands experts were unanimous in considering that these cables were indeed covered by Item 1526. Moreover, an important Netherlands firm which had been consulted had just stated that the Soviets had in fact asked them to submit an offer for the supply of cables having identical characteristics with those of the cables for which other Member Countries had been asked. As they were absolutely convinced that these cables were covered by Item 1526, the firm in question had not followed up the Russian enquiry. On that account no request had been submitted to the competent department regarding the export of these cables.

13. As the French Delegate had stated that the enquiry sent to the French industry had been considered by an inter-ministerial commission some time previously, and then authorised by virtue of Item 4481, the Netherlands authorities found it difficult to understand why the French authorities had not seen fit to consult the Committee, as was the practice in case of doubt. Even if the French experts had considered that these cables were covered by the Watch List, the Netherlands believed that in the event of the Committee considering that they were covered by the embargo list, the French authorities would be obliged by the commitments entered into in the Coordinating Committee to cancel the authorisation to export. The possible payment of an indemnity to the exporter could not be considered because it was important to avoid a fatal precedent. In view of the strategic aim pursued by the Russians in attempting this purchase, the Netherlands Government held it to be inconceivable that other exceptions should be authorised, all the more since this would constitute discrimination against countries who would have wished to be able to supply these cables but had refrained out of respect for the rules of the Coordinating Committee. As the French attitude involved a danger to Western cooperation in the embargo policy, the Netherlands authorities appealed urgently to the French authorities to cancel the export authorisation and to bear the consequences of this measure, both in the realm of political economy and in the financial field.

14. The DANISH Delegate reminded the Committee that he had already pointed out (COCOM 3470, paragraph 17) that the cables involved were covered

by Item 1526. As he had not received instructions regarding the proposal for an amendment submitted by the French Delegation, which his authorities were still studying, the Delegate reserved the right to revert to this matter in a later meeting.

15. The GERMAN Delegate remarked that a distinction should be made between two questions, the first being to know whether the cables involved were covered by Item 1526 and the second to determine whether they were important from the strategic point of view. This second question had not to be dealt with that day; the German Delegation would confine themselves therefore to stating that in their view no doubt existed as to the fact that these cables were covered by Item 1526: these were communication cables and it did not seem possible to say that they were covered by Item 4481, which referred to complete installations and not to separate elements of such installations. Replying to the Netherlands Delegate's observation that during the last List review the Committee had been unanimously in favour of retaining these cables under embargo, the Delegate pointed out that before the final compromise solution had been reached, the German Delegation - and others - had favoured a limitation of the coverage of Item 1526.

16. The ITALIAN Delegate stated that, in addition to the two questions mentioned by the German Delegate, there was a third: it should be established clearly which countries had undertaken not to export the material involved and for how long that undertaking remained valid. As some time was likely to elapse before the Committee reached agreement on the amendment of the items involved, the Italian Delegation wished to stress once more the danger of discrimination, whose consequences would be very serious in the economic field. Reverting to the question on the agenda, the Delegate stated that in his Delegation's view the cables in question corresponded to the letter of Item 1526, but that views would have to be expressed not only on this point but also as to whether it would be useful that the cables should continue to be covered by that item. In conclusion, the Delegate suggested that the Committee should base its present discussion on COCOM Doc. No. 3415.26/2, in which the Belgian Delegation had very clearly set out all the relevant technical arguments.

17. The JAPANESE Delegate stated that his authorities firmly believed that the cables involved were covered by Item 1526. He was not in a position at this stage to state his views as to the strategic value of these cables, but wished to associate himself with his German colleague's remarks and confirmed that during the list review his Delegation also had been in favour of a relaxation of Item 1526.

18. The GREEK Delegate stated that in the opinion of his Government, the cables in question had such strategic value that their export should have been regarded as impossible, and were undoubtedly caught by Item 1526.

19. The TURKISH Delegate stated that in his Government's view these cables were indeed covered by Item 1526 and their strategic importance fully justified their presence on the embargo list.

20. The FRENCH Delegate stated that he could not share the opinion of his German colleague that Item 4481 would only cover complete signalling systems and not their parts. He added that, owing to the extremely rapid evolution of railway signalling systems, processes and equipment of an increasingly complex nature were being used and that, in the fairly near future, it might become necessary to consider the downgrading of certain material at present on List I whose civilian uses were developing considerably.

21. The UNITED STATES Delegate stated that although he had already replied in what he hoped was a convincing manner to the other arguments put forward by the French Delegation, he wished nevertheless to reply to certain observations by the French Delegate as set out in paragraphs 7 - 11 above. First he would point out that it would not be justified to try to make a radical distinction between railway signal cables and communication cables.

(a) The first point under discussion was to determine whether the cables in question had a signalling capacity higher than the legitimate needs of the Trans-Siberian Railway. The United States authorities considered that the capacity of this cable was very considerably higher than any legitimate signalling needs; even in the most complex of modern systems, a few wires were sufficient to meet these needs. All technicians would agree that one pair of conductors was sufficient to meet the needs of the most modern CTC systems and, even in the most complex conditions, 10 conductors would amply suffice. Thus, signalling properly so called would only use a small fraction of the conductors in the cables sought by the U.S.S.R. It was important to realise in this regard that railway signalling and railway communications were completely different functions. In the United States, as moreover in the U.S.S.R. and doubtless in certain European countries, railway signalling systems were generally separated from the other communication systems for the administrative and commercial needs of the railway. In consequence, a considerable portion of the conductors of the cable ordered by the Russians would remain available for other types of communications and the functioning of the railway would in no way be affected by this circumstance.

(b) It could be proved that there existed no other means of linking the West and the East of the continent than by following the Trans-Siberian Railway, and whatever the type of communication (signals, messages or missiles), the cable must follow this railway - whence the necessity to give it special protection characteristics when the line was electrified.

(c) The Delegate stressed that the sheathing of the cables was only a superficial aspect of the question, determined purely by the surroundings in which they were to be placed, and that the essential aspect lay in the quality of the copper conductor. But, even without mentioning the possibility of laying cables in duplicate, the cables in question as they stood were capable of providing 168 telephone channels or more than 2,000 teletype channels, and this was clearly more than were needed to run any known railway.

(d) In reply to the French statement that these cables were not Post Office (P.T.T.) cables, the Delegate referred to volume III.B of the Report of the last Plenary Assembly of the International Telecommunications Union, which had set up standards for all the communication systems in Europe and in other parts of the world. This Report showed that the cables in question corresponded exactly to the standards set up for long-distance communication cables, not only as regards their structure in star quads, but also their mutual capacity and the diameter of their conductors. The Report stated, moreover, that these cables could provide up to 60 two-way telephone channels per star quad, using frequency-carriers, whereas the United States Delegation had based their arguments on the conservative figure of 12 channels per star quad.

(e) The French Delegation had given as an example the cables used by the S.N.C.F. on the Paris-Strasbourg line, which appeared to provide, as at present utilised, about 150 simultaneous channels. However, while the conditions in which the cable for the Paris-Strasbourg line was exploited were known, one could only surmise as to the manner in which the U.S.S.R. would use the cables they had asked for. One might

expect that they would be utilised efficiently, and therefore speak in terms of potential. Even assuming that the cable would only be laid single, the cable order placed by the Russians - at a conservative estimate - could provide at least 168 telephone channels or 2,000 teletype channels, i.e., considerably more than actually needed for the older Paris-Strasbourg cable. The cable could, moreover, be laid double, to produce more than double the communications capacity of this number of channels. The Delegate offered to any other Delegation wishing to study it a detailed comparison of the uses of the Paris-Strasbourg line and the likely utilisation of the cable ordered by the Russians.

(f) In conclusion, it was impossible to verify the Russian claim to the effect that the cables would be to some extent loaded, for the load consisted in the addition of outside coils after the laying of the cable in the U.S.S.R. It did in fact appear highly improbable that the Russians would ask for such highly perfected cables in order to load them, when this operation could be carried out equally well on less complex cables.

22. The FRENCH Delegate replying to a question from the United States Delegate, stated that in the French system signal cables never contained Post Office (P.T.T.) circuits, as this would be contrary to the Post Office monopoly and to the statutes of the S.N.C.F. Passing to the technical commentary by his American colleague, according to which the capacity of the cables ordered by the Soviet Union was higher than the requirements of a signalling system, the Delegate pointed out that, although the basic telecommand and telesignalling system required only a few pairs of conductors, it should be borne in mind that there were parallel systems assuring all the supplementary controls and themselves calling for a large number of wires and quads. As to the claim that these cables would constitute the only means for the Russians to service their Eastern regions, the Delegate stated that such an extensive territory could not possibly be serviced by a cable having 15 quads; the solution would lie in the use of wide-range Hertzian beams. The Delegate did not deny, on the other hand, that the characteristics of certain of the quads of the cable in question were close to those of communication cables, but this was not in the least surprising in view of the rapid development in railway signalling systems. It was logical that the Russians should endeavour to obtain signal cables corresponding to modern systems. It remained true, nevertheless, that the number of quads and the structure of the cables in question were totally different from those which would be used by Army or Post Office services, as these latter insisted upon having 4 coaxial cables for all long-distance communications. Finally, as to the loading of certain quads, the Delegate confirmed that the Russians had ordered the necessary coils with the cables, and that it was not likely that they would have assumed this expense if they had no real intention of loading the cables. The Delegate pointed out moreover that when the cable was equipped with such coils, special balancing was necessary. Thus it seemed out of the question that the coils would be removed.

23. A further exchange of views ensued, in the course of which several Delegations urged the French Delegation to invite their authorities once again to reconsider their position. In response to the various appeals made to him, the French Delegate reminded the Committee that, although considering that the material involved was indeed covered by Item 4481, his Government, in a spirit of compromise, had declared themselves ready to hold up the issue of any new licence until the Committee had reached an agreement on the interpretation of the items involved, or, should that prove impossible, on a more accurate definition of Item 1526. In view of the concern expressed by the Members of the Committee regarding the authorisation already granted, the French authorities were now prepared to take the necessary measures to stop the export of signalling and telecommand cables for railways if the Committee were in agreement in considering that these cables were strategic.

24. The CHAIRMAN then asked the French Delegate if the Committee's agreement which he had just mentioned included that of the French Delegation.

25. The FRENCH Delegate replied in the affirmative; he confirmed that the Committee's decision must be taken unanimously and that both for the exact meaning of this item and in accordance with previous usage in the Committee, unanimity was understood to mean the consensus of all participating Powers. He then made his Government's position explicit in the following terms: "The French authorities would be prepared to take the necessary steps to stop the export of signalling and telecommand cables for railways if the Committee considered unanimously that they are strategic".

26. The UNITED KINGDOM Delegate noted that, according to the last statement by the French Delegate, it appeared possible to withdraw an authorisation which had been duly granted.

27. The BELGIAN Delegate stated that as a result of the last French statement, the Belgian authorities would probably join the view of the majority which believed that the cables in question were covered by Item 1526. The Delegate suggested that it might in that event be necessary to determine the exact coverage of Item 4481.

28. The COMMITTEE agreed to resume the discussion on the 16th April.